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IN-SITU MEASUREMENT OF WATER OF HYDRATION IN POLYELECTROLYTE MEMBRANE (PEM) OF FUEL CELL

Abstract

A method and Apparatus for measuring water of hydration in a polyelectrolyte membrane (PEM) employs a source of input radiation directed at an input location on the PEM, and a detector responsively positioned at an output location relative to the input location for determining a sensible change in the input radiation indicative of a level of water hydration in the PEM. The method measures hydration of the (PEM) by forming an input location in the PEM; launching a source of radiation into the input location for reaction with the PEM material; detecting the reaction of the input radiation with the PEM material; and determining a sensible change in the input radiation as a result of the reaction indicative of a level of water hydration in the PEM.